

CLAIMS

1. (Amended) A plasm display panel in which a space between a first plate and a second plate facing each other is filled with a discharge gas, a plurality of pairs of display electrodes made
5 of Ag are formed on a surface of the first plate facing the second plate, and the surface of the first plate is covered with a dielectric layer covering the plurality of pairs of display electrodes, characterized in that:

the dielectric layer is made of a glass that contains
10 at least ZnO and 10 wt% or less of R_2O and does not substantially contain PbO and Bi_2O_3 , and a product of permittivity ϵ and loss factor $\tan\delta$ of the dielectric layer is 0.12 or less, wherein R is selected from a group consisting of Li, Na, K, Rb, Cs, Cu, and Ag.

2. The plasm display panel of Claim ²⁰1, wherein

the permittivity ϵ of the dielectric layer is 7 or less.

3. The plasm display panel of Claim ²⁰1, wherein

the dielectric layer contains 10-25 wt% of P_2O_5 , 20-35
20 wt% of ZnO, 30-40 wt% of B_2O_3 , 5-12 wt% of SiO_2 , 10 wt% or less of R_2O , and 10 wt% or less of DO, and the permittivity ϵ of the dielectric layer is 7 or less, wherein D is selected from a

group consisting of Mg, Ca, Ba, Sr, Co, Cr, and Ni.

4. The plasm display panel of Claim ^{1c} X, wherein

the dielectric layer is composed of a ZnO-P₂O₅-base glass which contains 42-50 wt% of P₂O₅, 35-50 wt% of ZnO, 7-14
5 wt% of Al₂O₃, and 5 wt% or less of Na₂O, and the permittivity ϵ of the dielectric layer is 7 or less.

5. The plasm display panel of Claim ^{1c} X, wherein

the dielectric layer is composed of a ZnO-base glass which contains 20-44 wt% of ZnO, 38-55 wt% of B₂O₃, 5-12 wt% of
10 SiO₂, 10 wt% or less of R₂O, and 10 wt% or less of MO, and the permittivity ϵ of the dielectric layer is 7 or less, wherein R is selected from a group consisting of Li, Na, K, Rb, Cs, Cu, and Ag, and M is selected from a group consisting of Mg, Ca, Ba, Sr, Co, and Cr.

15 6. The plasm display panel of Claim ^{1c} X, wherein

the dielectric layer is composed of a ZnO-base glass which contains 20-43 wt% of ZnO, 38-55 wt% of B₂O₃, 5-12 wt% of SiO₂, 1-10 wt% of Al₂O₃, 10 wt% or less of R₂O, and 10 wt% or
less of MO, and the permittivity ϵ of the dielectric layer is
20 7 or less, wherein R is selected from a group consisting of Li, Na, K, Rb, Cs, Cu, and Ag, and M is selected from a group consisting of Mg, Ca, Ba, Sr, Co, and Cr.

7. The plasm display panel of Claim ¹⁰~~1~~, wherein

the dielectric layer is composed of a ZnO-base glass which contains 1-15 wt% of ZnO, 20-40 wt% of B₂O₃, 10-30 wt% of SiO₂, 5-25 wt% of Al₂O₃, 3-10 wt% of Li₂O, and 2-15 wt% of MO, and the permittivity ϵ of the dielectric layer is 7 or less, wherein M is selected from a group consisting of Mg, Ca, Ba, Sr, Co, and Cr.

8. The plasm display panel of Claim ¹⁰~~1~~, wherein

the dielectric layer is composed of a ZnO-base glass which contains 35-60 wt% of ZnO, 25-45 wt% of B₂O₃, 1-10.5 wt% of SiO₂, 1-10 wt% of Al₂O₃, and 5 wt% or less of Na₂O, and the permittivity ϵ of the dielectric layer is 7 or less.

9. The plasm display panel of Claim ¹⁰~~1~~, wherein

the dielectric layer is composed of a ZnO-base glass which contains 35-60 wt% of ZnO, 25-45 wt% of B₂O₃, 1-12 wt% of SiO₂, 1-10 wt% of Al₂O₃, and 5 wt% or less of K₂O, and the permittivity ϵ of the dielectric layer is 7 or less.

10. The plasma display panel of Claim ¹⁰~~1~~, wherein

the dielectric layer is composed of a ZnO-Nb₂O₅-base glass which contains 9-19 wt% of Nb₂O₅, 35-60 wt% of ZnO, 20-38 wt% of B₂O₃, 1-10.5 wt% of SiO₂, and 5 wt% or less of Li₂O, and permittivity ϵ of the dielectric layer is 7 or less.

11. (Amended) A plasm display panel in which a space between a first plate and a second plate facing each other is filled with a discharge gas, a plurality of pairs of display electrodes made of Ag are formed on a surface of the first plate facing the second plate, and the surface of the first plate is covered with a dielectric layer covering the plurality of pairs of display electrodes, characterized in that:

the dielectric layer is made of a glass which is composed of 20-30 wt% of P_2O_5 , 30-40 wt% of ZnO, 30-45 wt% of B_2O_3 , and 1-10 wt% of SiO_2 and a product of permittivity ϵ and loss factor $\tan\delta$ of the dielectric layer is 0.12 or less.

12. (Amended) A plasm display panel in which a space between a first plate and a second plate facing each other is filled with a discharge gas, a plurality of pairs of display electrodes made of Ag are formed on a surface of the first plate facing the second plate, and the surface of the first plate is covered with a dielectric layer covering the plurality of pairs of display electrodes, characterized in that:

the dielectric layer is made of a glass which is composed of 30-45 wt% of ZnO, 40-60 wt% of B_2O_3 , and 1-15 wt% of SiO_2 and a product of permittivity ϵ and loss factor $\tan\delta$ of the dielectric layer is 0.12 or less.

13. (Amended) A plasm display panel in which a space between a

first plate and a second plate facing each other is filled with a discharge gas, a plurality of pairs of display electrodes made of Ag are formed on a surface of the first plate facing the second plate, and the surface of the first plate is covered with a dielectric layer covering the plurality of pairs of display electrodes, characterized in that:

the dielectric layer is made of a glass which is composed of 30-45 wt% of ZnO, 40-55 wt% of B₂O₃, 1-10 wt% of SiO₂, 1-10 wt% of Al₂O₃, and 1-5 wt% of CaO, and a product of permittivity ϵ and loss factor $\tan\delta$ of the dielectric layer is 0.12 or less.

14. (Amended) A plasm display panel in which a space between a first plate and a second plate facing each other is filled with a discharge gas, a plurality of pairs of display electrodes made of Ag are formed on a surface of the first plate facing the second plate, and the surface of the first plate is covered with a dielectric layer covering the plurality of pairs of display electrodes, characterized in that:

the dielectric layer is made of a glass which is composed of 40-60 wt% of ZnO, 35-45 wt% of B₂O₃, 1-10 wt% of SiO₂, and 1-10 wt% of Al₂O₃, and a product of permittivity ϵ and loss factor $\tan\delta$ of the dielectric layer is 0.12 or less.

15. (Amended) A plasm display panel in which a space between a

first plate and a second plate facing each other ~~is~~ filled with a discharge gas, a plurality of pairs of display electrodes made of Ag are formed on a surface of the first plate facing the second plate, and the surface of the first plate is covered with
5 a dielectric layer covering the plurality of pairs of display electrodes, characterized in that:

the dielectric layer is made of a glass which is composed of 30-60 wt% of ZnO, 30-50 wt% of B₂O₃, 1-10 wt% of SiO₂, and 1-10 wt% of Al₂O₃, and a product of permittivity ϵ and
10 loss factor $\tan\delta$ of the dielectric layer is 0.12 or less.

16. (Amended) A plasm display panel in which a space between a first plate and a second plate facing each other is filled with a discharge gas, a plurality of pairs of display electrodes made of Ag are formed on a surface of the first plate facing the
15 second plate, and the surface of the first plate is covered with a dielectric layer covering the plurality of pairs of display electrodes, characterized in that:

the dielectric layer is made of a glass which is composed of 9-20 wt% of Nb₂O₅, 35-60 wt% of ZnO, 25-40 wt% of
20 B₂O₃, and 1-10 wt% of SiO₂, and a product of permittivity ϵ and loss factor $\tan\delta$ of the dielectric layer is 0.12 or less.

17. (Amended) A plasm display panel in which a space between a first plate and a second plate facing each other is filled with

a discharge gas, a plurality of pairs of display electrodes made of Ag are formed on a surface of the first plate facing the second plate, and the surface of the first plate is covered with a dielectric layer covering the plurality of pairs of display electrodes, characterized in that:

the dielectric layer is composed of

a first dielectric layer which either is a thin film of SiO_2 , Al_2O_3 or ZnO or is made of a glass containing at least PbO or Bi_2O_3 and covers the plurality of pairs of display electrodes, and

a second dielectric layer made of a glass in which a product of permittivity ϵ and loss factor $\tan\delta$ is 0.12 or less, the second dielectric layer covering the first dielectric layer.

18. The plasma display panel of Claim ²⁷17, wherein

the second dielectric layer contains is made of a glass that at least ZnO and 10 wt% or less of R_2O and does not contain PbO and Bi_2O_3 , wherein R is selected from a group consisting of Li, Na, K, Rb, Cs, Cu, and Ag.

19. The plasma display panel of Claim ²⁷17, wherein

a total thickness of the dielectric layer is 40 μm or less, and a thickness of the first dielectric layer is half of the total thickness or less.